

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)
)
Digital Television Distributed Transmission) MB Docket No. 05-312
System Technologies)
)

To: The Commission

Comments of Siete Grande Television, Inc.

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Siete Grande Television, Inc. (“Siete Grande”), by its attorneys, respectfully submits the following Comments in response to the Commission’s Clarification Order and Notice of Proposed Rulemaking relating to the use of Distributed Transmission Systems (“DTS”) and rules for future DTS operation in connection with the DTV transition.

I.

Introduction

1. Siete Grande is the licensee of Station WSTE-TV, NTSC Channel 7, Ponce, Puerto Rico. Some nineteen years ago, in order to overcome the obstacles of Puerto Rico’s well documented mountainous terrain, the Commission authorized WSTE-TV to deploy a multi-site transmission system consisting of an auxiliary main transmitter and three co-channel booster stations that operate simultaneously to produce a single island-wide signal on its assigned Channel 7. In fact, the mountainous terrain shields self-interference and enables WSTE-TV to provide

island-wide analog coverage on one channel. Since that time WSTE-TV has provided an independent television service to inhabitants across the Commonwealth.

2. Siete Grande participated in the Second DTV Periodic Notice of Proposed Rulemaking in MB Docket No. 03-15 and supported the adoption of rules that would enable implementation of DTS service technologies as a means through which WSTE could maintain its existing island-wide analog coverage following the DTV transition. Siete Grande agrees that DTS technologies provide a viable solution for overcoming terrain shielding and that these technologies are well suited to achieve a unified signal from multiple transmitters that will be free from self-interference. Siete Grande welcomes the adoption of rules to implement DTS technologies and urges the Commission to adopt such rules on a permanent basis. The Commission should also build in necessary flexibility in its rules in view of the legislatively mandated DTV transition deadline so as to permit stations such as WSTE-TV to deploy DTS technologies on their elected ultimate DTV channel, and to facilitate full-signal replication of their analog coverage area in an orderly and cost-efficient manner.

3. In its instant rulemaking proceeding, the Commission seeks comments on regulations for licensing distributed transmission technologies, the technical requirements pertaining to DTS operation and the public interest benefits of granting primary status to a distributed transmission system that utilizes separately sited co-channel transmitters to achieve full service area coverage. As

the operator of a unique analog co-channel system that has produced an interference free stable array for more than 19 years to achieve service area coverage that would not otherwise be possible, Siete Grande has gained experience which it believes can be of value to the Commission as it considers adoption of rules to govern distributed transmission facilities for DTV stations. Siete Grande wholly supports granting primary status to distributed transmission systems and developing licensing rules and technical criteria that will enable stations like WSTE-TV to deploy such systems on a permanent basis prior to the deadline for DTV transition.

4. In the instant rulemaking, the Commission clarified its policy with regard to authorizing interim DTS operations. Siete Grande has explored various ways to achieve DTV island-wide coverage for WSTE-TV in time for the transition deadline. This is a particularly complex problem for WSTE-TV because its replication area is based on its licensed analog Grade B area, which encompasses the entire island of Puerto Rico, when at the present time, on WSTE-TV's transition DTV channel, interference limitations prevent island-wide coverage, actual or predicted, from a single transmitter site. Since WSTE-TV relies on all four of its transmitters operating simultaneously to maintain island-wide coverage of its analog signal, it stands to reason that it will need to continue to do so to achieve DTV island-wide coverage, and that it will therefore utilize DTS technologies to replicate such coverage. However, the deadline for full DTV replication and interference protection is July 1, 2006, a mere five months from now, and obviously no rules for permanent

DTS operation will be in place by then. Moreover, in a somewhat anomalous situation, due to interference limitations, WSTE-TV's assigned transitional DTV channel covers less of the island than does its elected ultimate DTV channel which will enable full island coverage. Siete Grande urges the Commission to address WSTE-TV's unique circumstances and permit the Station to seek permanent DTS authority so as to provide DTV coverage encompassing the entire island of Puerto Rico on WSTE-TV's elected post-transition DTV Channel 7. To that end, Siete Grande believes that the replication deadline should be extended for any station such as WSTE-TV which currently operates a system of one primary TV transmitter and widely spaced TV boosters, or translators, for the express purpose of overcoming terrain obstructions to provide a usable signal to all the populated areas within the station's authorized service contour.

5. In its instant rulemaking proceeding, the Commission seeks comment on the impact of its DTS proposals on the need for DTV booster stations. As mentioned here before, three of the four TV transmitters that make up the WSTE-TV island-wide system are licensed as boosters. In order for an orderly and efficient transition to island-wide DTV operation to take place, Siete Grande desires to flash-cut the boosters to DTV on the existing analog channel, which is also WSTE-TV's elected post-transition DTV channel. Siete Grande urges the Commission to consider rules that would permit TV boosters to immediately flash-cut to DTV on the same channel, and continue to operate that way on an interim and non-interference basis until the Commission makes a decision regarding the future of TV booster stations

in the realm of DTS technology. Currently, the ability to apply for flash-cut is available only to TV translators and singleton TV stations.

II.

History and Description of Siete Grande's Unitary Analog System

6. In 1985, a WSTE-TV predecessor licensee sought authority to construct an experimental broadcast facility utilizing widely spaced transmitters with circularly polarized antennas at low elevations in front of mountain peaks, all operating simultaneously on the same frequency. The intent of the experimental operation was to enable Station WSTE-TV to bring an independent, local service to large areas of the island previously unable to receive WSTE-TV's signal because of terrain factors. The Commission, in authorizing experimental operation concluded that the experiment would provide information useful to an evaluation of methods of overcoming terrain obstructions, and would provide a viewable signal to areas within the Station's licensed contours previously unable to receive the signal by direct means. The multi-transmission system was specifically developed because Puerto Rico's intervening mountains and terrain barriers precluded the signal from the Station's main transmitter from reaching, or even approaching, most of the populated areas on the island of Puerto Rico which are within the Station's authorized coverage contour. WSTE-TV believed that a system of simultaneously transmitting co-channel transmitters could provide greater service to the inhabitants within the authorized footprint of the Station's license than would be possible from a single transmission site which would provide primary coverage to

Ponce but be shielded by mountains from most of the rest of the island. The Commission authorized WSTE-TV to construct and test on an experimental basis this unique system – a system that to this day in analog technologies has not been replicated in Puerto Rico, the mainland or elsewhere. Ponce Television Corporation, 1 FCC Rcd. 1167 (1986), recon. denied 2 FCC Rcd. 5878 (1987). See also Channel 7, Inc., 4 FCC Rcd. 5258 (1989). The same limitation that impeded island-wide signal coverage from a single transmitter in 1985 applies with equal force to DTV transmission today.

7. WSTE-TV constructed and tested its multi-site analog facility, investing millions of dollars into a process that succeeded in establishing an independent island-wide signal—one of just four commercial television stations that cover the island of Puerto Rico. Significantly, the other stations do not cover the island from one transmitter either. Instead they have obtained satellite waivers or utilize affiliated stations to achieve island-wide coverage. On August 20, 1992, the Commission, after an exhaustive review of thousands of measurements, granted Siete Grande a permanent license to operate the multi-site facility including Siete Grande's request for waiver of the Commission's rules to enable the booster stations to operate with higher than the maximum power permitted for booster stations. The coverage results of the experiment were impressive. See Siete Grande Television, Inc., 7 FCC Rcd. 5299 (1992). In granting the license to operate this integrated multi-transmission facility, the Commission pointedly observed (Siete Grande, supra)

“We believe that the mountainous terrain of Puerto Rico supports use of alternative methods to extend broadcast television service to as many people as possible. *See also, Channel 7, Puerto Rico*, 58 FCC 2d 1148 at 1151 (1975). The combination of the island’s topography and its geographic isolation, places Puerto Rico in a highly unusual position. Its geography significantly obstructs local broadcast signals, and, because of its isolation, it does not receive any broadcast signals from off the island. Nevertheless, that isolation allows broadcasters, such as Siete Grande, the flexibility to utilize innovative means to improve actual coverage without risking cochannel or adjacent-channel interference to others.

“Based on the evidence presented, we find that grant of Siete Grande’s applications will serve the public interest. Analysis of the data submitted by Siete Grande in conjunction with the experiment confirms that the four transmitters greatly improve actual reception of channel 7 throughout the island, allowing improved service to approximately 1.3 million people. Grant of the applications will not extend the station’s coverage beyond the area which the applicant is already licensed to serve; indeed, grant of the applications will allow Siete Grande substantially to enhance its service to those whom it is already licensed to serve. In addition, operation of the facilities will cause no interference to any cochannel or adjacent-channel station, nor will it preclude the establishment of any new facility which was not already precluded by the currently authorized channel 7 facility.”

“...the combination of the island’s topography and its geographic isolation places Puerto Rico in a highly unusual position. The island’s topography significantly obstructs local broadcast signals, and limits the ability of television stations in San Juan to provide service to portions of the island for which service would ordinarily be received. Therefore, in order for San Juan stations to reach audiences in the outer portions of the island, they must rely on some type of ownership/overlap combination or alternative engineering solution[s].”

8. Achieving island-wide coverage through means of the multi-site transmission facility has enabled WSTE-TV to provide emergency information and

coverage in times of national disasters and hurricanes that routinely unleash nature's destructive forces upon the island. Over the years, the need for such communication facilities has been attested to by the Governor, the Commonwealth Resident Commissioner and Member of Congress, mayors of major cities including San Juan and the community of license, Ponce, and the Civil Defense Administration as television communication remains the most important and efficient vehicle for information distribution to population areas that are cut off from other forms of mass communication.¹ The importance of WSTE-TV's coverage capability is heightened further in this precarious time of homeland security, terrorism and national defense.

III.

WSTE-TV'S Attempts to Achieve DTV Service Area Replication

9. The four multi-site transmission facilities broadcast as a single system on Channel 7 even though they operate from a separate auxiliary transmitter site in Ponce and three booster locations in San Juan, Mayaguez and Arecibo. This integrated system of synchronous co-channel signals has been operating successfully as a single unitary system on a stable continuing basis since 1986, and has neither caused nor received interference from any television facility during its two decade period of operation. The booster facilities do not expand the Station's

¹ See *Request for Immediate Action*, filed by Siete Grande Television, Inc., dated February 21, 1992, on File No. BPCT-900531KE and *Reply Comments* of Siete Grande Television, Inc., dated January 24, 2003 in DA 02-3383.

coverage area beyond its predicted Grade B contour. Rather, the boosters enable WSTE-TV to provide service to those areas within the Grade B contour that could not otherwise receive service from a single transmitter location alone. This coverage was achieved without causing any interference to any other FCC licensed service. Most significantly, although the Commission licensed three of the transmitters as boosters, which as secondary stations would not be entitled to protection, in terms of the Station's analog facilities, full service protection was afforded to Channel 7 by reason of the surrounding water and the primary status of the Station's main transmitter license across the island. In short, the distributed transmission system delivering the analog signal—even though through boosters—had de facto primary status since it was fully protected within WSTE-TV's predicted contour across the island and was not subject to preemption by higher classed primary stations. Deploying a similar DTS system for DTV operations should receive primary status protection to achieve permanence of the service as well and to ensure full and continuous replication of WSTE-TV's analog signal.

10. The grant of WSTE-TV's license predated the development of the Commission's DTV rules. In the FCC's *Sixth Report and Order* the proposed DTV Allocation Table failed to address full signal replication of Channel 7's island-wide coverage area achieved through use of the booster facilities. Siete Grande was assigned a single DTV channel allotment on Channel 66 at its main transmitter site in Ponce.

11. Siete Grande petitioned the Commission to partially reconsider the *Sixth Report and Order* by taking into account digital service area replication in the context of WSTE-TV's unique licensed facilities including its auxiliary main and three booster stations. Siete Grande observed that obtaining and building out the experimental and permanent authorizations required a multi-million dollar investment risk. The costs included engineering and permits, construction of towers, purchase of transmitters and the construction of an intricate microwave system to connect the various boosters. Not only will the investment encouraged by the Commission be lost if DTV signal replication of the analog contour is not achieved, but from a public interest standpoint, a large number of Puerto Rico's inhabitants would lose over the air reception of Channel 7.

12. In its *Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order*, FCC 98-24, released February 23, 1998 ("Reconsideration Order"), the Commission recognized that "the mountainous terrain characteristics of ... Puerto Rico does provide some terrain shielding of television signals." The Commission added "...we believe that these terrain characteristics should permit broadcasters such as SGI [Siete Grande] to implement future booster stations if desired. We believe that coverage enhancements through the use of secondary low power stations are best addressed through local engineering solutions rather than as part of the DTV allotment process."²

² *Reconsideration Order* ¶ 355.

13. Siete Grande followed this instruction with years of effort and further expense. In 1999 Siete Grande filed an application for DTV authorization, requesting a waiver to establish synchronous DTV facilities at its booster sites in order to replicate its existing analog signal and preserve its independent island-wide service.

14. In February, 2002, Siete Grande filed an application for a single unitary license to cover all of its multi-site facilities. Such license would have conferred primary station status upon the booster sites by looking beyond the component parts of the signal and treating the entire integrated synchronous co-channel operation as one single array. The unitary license would enable Siete Grande to receive protected status as a primary station at each location so that Siete Grande could replicate its island-wide service with DTV facilities in precisely the same way it provides island-wide analog coverage to its viewers now. The public interest benefits of being able to perpetuate this island-wide coverage have been attested to by numerous public officials. (See par. 8, *supra*.) Moreover, Siete Grande submitted a detailed preclusion study which demonstrated that conferring such primary status would not preclude any core or out of the core stations from finding frequencies of their own were the Commission to permit DTV operation at Siete Grande's booster locations.

15. On December 10, 2002, the Commission placed Siete Grande's unitary license application on a special public notice to solicit comments from interested parties as to the public interest ramifications of making such a grant. No party

opposed the grant and no party in Puerto Rico commented upon the preclusion study or challenged its findings. Two parties, without opposing the merits of the Application, suggested that the Commission defer action on the proposal and instead conduct a rulemaking inquiry into the general benefits of unitary licenses. Shortly after the comment period expired, the Commission released its *Second Periodic Review*. On March 28, 2003, the Commission declined to address the issues raised by Siete Grande's unitary license application, reasoning that "These very issues are being explored by the Commission in a pending rulemaking proceeding." [and] "to do so could be seen as prejudging the rulemaking." See *Letter to Stuart Shorenstein*, dated March 28, 2003, DA 02-3383, p. 2.

16. Siete Grande then participated in the *Second Periodic Review DTV Rulemaking Proceeding* (MB 03-15), and the Commission, in its Order, pointed to DTS technologies as a solution for stations such as WSTE-TV to achieve DTV coverage replication. The instant rulemaking proceeding contemplates the ultimate solution for resolving the coverage dilemmas for WSTE-TV as it seeks to replicate its existing analog channel island-wide coverage. However, what is urgently needed is a regulatory framework within which WSTE-TV would be able to transition to island-wide DTV service in an orderly and cost-efficient fashion, and have full replication by the time the cessation of analog TV service becomes mandatory. Given the recent adoption of legislation establishing a firm DTV transition deadline in 2009, the high cost of building out DTS facilities, and the slow pace of construction in Puerto Rico, the Commission should build in flexibility to its DTS

rules to enable stations such as WSTE-TV to have the authority for full and permanent replication coverage on its ultimate DTV channel in advance of the 2009 deadline.

17. Siete Grande now holds a construction permit for DTV Channel 8 in Ponce and is in the process of establishing DTV operations on that channel. Because of interference limitations, the authorized Channel 8 DTV contour covers only the south half of the island of Puerto Rico. WSTE-TV has elected and has been assigned DTV Channel 7 as its ultimate DTV channel in Puerto Rico, which is the only way for replication to be achieved of its current island-wide coverage area on analog Channel 7. The most efficient method in terms of both timing and cost to achieve full replication will be for Siete Grande to flash cut to its DTV service on Channel 7, especially since there are interference limitations to take into consideration on its currently assigned DTV Channel 8 that will inhibit full island-wide replication on that channel even if boosters or DTS technologies were deployed. This would require a waiver of the Commission's rules, since DTV boosters have not been authorized at this time. However, Siete Grande believes that granting authority to convert the previously deployed boosters to DTV is justified and would not pre-judge the instant rulemaking because 1) the boosters are already authorized to operate on Channel 7 under authority granted by waiver of the maximum booster power rule, and 2) the boosters, operating as DTV transmitters at lower power levels that match the coverage of their current NTSC signals, would not cause any interference to any other station and would not preclude any new or

modified facility that wasn't already precluded by the licensed main Channel 7 facility. In fact, the same rationale that the Commission applied in granting the original Channel 7 booster applications (see previous excerpt of Siete Grande, 7 FCC Rcd. 5299), can easily be applied to justify flash-cutting the boosters, which is an essential step in transitioning WSTE-TV to DTV island-wide coverage.

IV.

The Instant Rulemaking Proceeding

18. Siete Grande probably has more experience in operating integrated distributed transmission systems than any station in the country. However, Siete Grande lacks the resources to develop general rules and guidelines that would be applicable to mainland stations where issues of interference are not mooted by Puerto Rico's surrounding sea. Nonetheless, based on the experience gained by operating a stable array for nineteen years, the following parameters appear to be critical in achieving an integrated distributed transmission system that produces a unitary signal:

- Co-channel operation
- No interference between transmitters (achieved either by synchronous carriers or terrain shielding)
- Limitation of service to that produced theoretically by a single main transmitter
- A preclusion study that demonstrates no preclusionary effect
- Absence of interference to or from other existing stations.

These criteria also define WSTE-TV's current analog operation. They also closely parallel the Commission's proposed rules for DTS. It is unimaginable that after encouraging the use of local engineering solutions to overcome terrain obstruction, the expenditure of millions of dollars to achieve an engineering marvel, and the public interest benefits that demonstrably flow from serving the entire island of Puerto Rico with one signal, that DTV island-wide service would be unduly delayed or impeded because the square peg represented by WSTE-TV's unique transmission system doesn't fit in the round hole of the Commission's rules and policy framework that exists today.

19. Siete Grande urges the FCC to permit stations that have elected their analog channel as their final digital channel to flash-cut their boosters operating within their predicted analog contour to DTV, regardless of whether or not the boosters' proposed DTV service areas lie within the predicted coverage contour of its presently assigned DTV station. This authority should be made available before the finalization of the post-transition DTV allotment table and before the effective date of the ultimately-adopted DTS rules. Siete Grande believes that granting such authority would clearly be in the public interest, as it would help expedite the DTV transition of multi-site transmission systems such as WSTE-TV. Siete Grande believes that planning, constructing and implementing an island-wide DTV system will take all the time between now and the 2009 post-transition date, and that waiting for the adoption of DTS rules will not permit WSTE-TV to meet that deadline and will cause a large swath of Puerto Rico's population to lose an existing

service for an indeterminate period of time. It is urged that in connection with the consideration of new rules for DTS technologies, the Commission maintain a flexible posture to consider the grant of either Special Temporary Authority or permanent license with appropriate waivers in special circumstances so as to enable existing analog service to be maintained and not interrupted or permanently lost as a result of transition to DTV.

V.

Conclusion

20. In summary, Siete Grande has deployed perhaps the only DTS type of system in use for analog broadcasting and has overcome terrain obstacles to provide service to large populations that would otherwise be unserved due to mountainous terrain. Its signal has been stable and reliable. Siete Grande believes that DTS technologies will work with similar effectiveness on DTV channels and supports the adoption of rules that will enable stations such as WSTE-TV to achieve, through deployment of DTS technologies, full service that will replicate existing analog coverage. The Commission should afford primary status to such signal systems to provide protection for their signal coverage.

21. In view of the looming 2009 DTV transition deadline, the Commission should develop flexible rules that will allow stations which have elected and been assigned their analog channel as their ultimate DTV channel to flash cut their booster station using synchronous carrier technologies, or in the alternative, terrain shielding to replicate their existing analog coverage, especially when such

replication cannot be achieved, even through DTS technologies, on the Station's transition DTV channel. The Station's main TV facility, which serves the city of license, should be permitted to continue to transmit simultaneously on its DTV and analog channels until the end of the transition period. The Commission should accept applications for such flash cut proposals on the Station's ultimate DTV channel in order to promote an orderly and cost efficient transition to DTV service and to preserve broadcast service to populations that would otherwise be hurt by a loss of such service. Stations such as WSTE-TV should not be precluded by anomalous circumstances from achieving the ultimate goals of the DTV transition, which was to maintain current levels of broadcast service to the public. The Commission therefore should permit DTS applications to be filed to achieve full DTV replication of existing analog service on the Station's elected ultimate DTV channel in circumstances where the transitional DTV channel provides principal community of license coverage but cannot fully replicate the full existing analog service area where the Station has elected its analog channel as its ultimate DTV channel to achieve such replication.

Respectfully submitted,

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